

**REMARKS**

Claims 1-25 are pending in the application and claims 1-8 stand rejected. Applicants gratefully acknowledge Examiner's indication that claims 9-25 are in condition for allowance.

By the above amendment, claims 1, 2 and 6 have been amended. Applicants respectfully request reconsideration of the claim rejections based on the above amendments and following remarks.

**Finality of Office Action**

Applicants respectfully request that Examiner withdraw the finality of this Office Action. As set forth in MPEP 706.07(b), it is not proper to make final a first Office action in a continuing or substitute application where that application contains material which was presented in the earlier application after final rejection or closing of prosecution but was denied entry because new issues were raised that required further consideration and/or search, or the issue of new matter was raised.

In the Advisory Action of June 9, 2003 (Paper No. 12), Examiner denied entry of Applicants' After Final Response (filed on May 30, 2003) on the ground that Applicants' Response "raised additional arguments ...". Applicants thereafter filed a CPA requesting entry and consideration of Applicants after final response. Thereafter, Examiner issued this Final first office action. Thus, Applicants believe that the issuance of the final office action is premature.

Even assuming that the finality of this Action is proper, Applicants respectfully request that in all fairness, Examiner either withdraw the finality of this action and enter the amendment, or otherwise consider the current claim amendments and enter this Amendment for purposes of Appeal, if Examiner maintains the claim rejections and the finality of the action.

**Claim Rejections – 35 U.S.C. 103**

Claims 1-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,287,309 to Kai in view of U.S. Patent No. 6,167,488 to Koppala. It is respectfully submitted that at the very minimum, the combination of Kai and Koppala is legally deficient to establish a *prima facie* case of obviousness against claims 1, 2 and 6, because such combination does not teach or suggest elements of such claims. More specifically, by way of example, Applicants respectfully submit that the combined teachings of Kai and Koppala do not disclose or fairly suggest a stack storage including a plurality banks, and stack control mechanisms that enable performance of *a multi-word push operation by storing a single word in each bank at a time or a multi-word pop operation by removing a single word from each bank at a time*, as essentially claimed in claims 1, 2 and 6.

Although Kai discloses a stack having two banks, Kai discloses a method for simultaneously performing a Push (write) and Pop (read) operation with respect to an input address, wherein one bank is used for the Push operation and the other bank is used for the Pop operation. This framework enables an effective increase in the stack access time because the stack access operation (read and write) is commenced prior to deciding whether the Push (write) or Pop (read) operation is actually requested with respect to the input address (see, e.g., Abstract, Col 4, lines 10-20). Ultimately, however, only one of the single-word stack accesses (e.g., push or pop) is validated (see, e.g., Abstract, Col. 6, lines 20-32) and the stack pointer SP is adjusted accordingly.

Therefore, it is clear that Kai does not disclose or suggest a multi-bank stack for performing *a multi-word push operation by storing a single word in each bank at a time or performing a multi-word pop operation by removing a single word from each bank at a time*. In

fact, Examiner acknowledges that Kai does not disclose that the single stack pointer can be used to perform a multi-word operation.

It is respectfully submitted that Koppala does not cure the deficiencies of Kai in this regard. Examiner points to Col. 24, lines 29-32 of Koppala as disclosing that "the most common stack manipulation for stack based computing system is to pop the two words from stack and to push a data word onto the top of the stack." Although Koppala mentions a multi-word stack operation, Koppala provides no details in the cited section regarding how such multi-word operation is performed, much less disclosing or suggesting a multi-word stack operation using a plurality of banks.

However, Examiner essentially contends that it would have been obvious to one of ordinary skill in the art to apply the teachings of Koppala to the circuit of Kai to execute a two POP operation (removing a two-word item from the stack) instead of one PUSH and one POP operation by simply transforming the logic as suggest by Kai. It is respectfully submitted that with respect to the inventions of claims 1, 2 and 6, Examiner's basis for obviousness and motivation for combining the teachings of Kai and Koppala is legally deficient and improper.

In particular, it is axiomatic that if a proposed modification would render a prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See, MPEP 2143.01, citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1964). Furthermore, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. See, MPEP 2143.01, citing *In re Ratti*, 270 F.2d 810 (CCPA 1959).

Here, to the extent that Examiner's basis for obviousness is grounded on the stack storage system of Kai being modified by the teachings of Koppala such that Kai can be implemented to execute a two-word PUSH or two-word POP operation using the two bank stack, instead of a single-word PUSH and a single-word POP operation, it is respectfully submitted that such basis is legally improper. Indeed, as noted above, the impetus and basic principle of operation behind the two bank stack system of Kai is to provide a high speed stack operation by simultaneously executing a POP operation in one bank and a PUSH operation in the other bank so as to access the stack (RAM) before the data process mode is decided (see, e.g., Abstract).

Examiner's proposed modification of the Kai system to perform a two-word PUSH or two-word POP operation - i.e., using each bank to perform a single-word PUSH operation at the same time to obtain a two-word PUSH, or using each bank to perform a single-word POP operation at the same time to obtain a two-word POP - would fundamentally change the principle and purpose of the Kai system. Indeed, in such instance, the Kai system would only be able to perform either a multi-word Read operation or a multi-word Write operation. This proposed modification of Kai clearly renders Kai unsatisfactory for its intended purpose and significantly changes the principle of operation of the Kai system, which is to simultaneously perform both a read operation in one bank and a write operation in the other bank before the actual data access mode is determined.

Furthermore, to the extent that Examiner contends that Kai can be modified by Koppala to perform a multi-word PUSH on one bank and a multi-word POP on another bank, this would not disclose or suggest performing a multi-word push operation by storing a single word in each bank at a time or a multi-word pop operation by removing a single word from each bank at a time, as essentially claimed in claims 1, 2 and 6.

Accordingly, for at least the above reasons, the combination of Kai and Koppala is legally deficient to establish a *prima facie* case of obviousness against claims 1, 2 or 6. In addition, since claims 3-5 depend from claim 2 and claims 7-8 depend from claim 6, these claims are believed to be patentable and non-obvious over the combination of Kai and Koppala for at least the reasons given above for claims 2 and 6. Accordingly, the withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

Early and favorable consideration by the Examiner is respectfully urged. Should the Examiner believe that a telephone or personal interview may facilitate resolution of any remaining matters, it is requested that the Examiner contact Applicants' undersigned attorney.

Respectfully submitted,



Frank DeRosa  
Reg. No. 43,584  
Attorney for Applicant(s)

F. Chau & Associates, LLP  
1900 Hempstead Tnpk.  
East Meadow, NY 11553  
TEL.: (516) 357-0091  
FAX: (516) 357-0092